TITLE OF THE INVENTION

GLIDING APPARATUS HAVING TWO SURFACES

INVENTORS

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CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is based upon French Patent Application No. 02.08274, filed June 26, 2002, the disclosure of which is hereby incorporated by reference thereto in its entirety, and the priority of which is hereby claimed under 35 U.S.C. §119.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0002] The invention relates to a gliding apparatus, such as a snowboard, for example, having a support surface and a gliding surface. The apparatus is provided to be steered by the physical action of a user, with or without the assistance of gravity.

2. Description of Background and Relevant Information

[0003] Apparatuses of the aforementioned type are generally used on slippery ground, such as snow or ice, and occasionally grass or sand.

[0004] U.S. Patent No. 3,343,847 discloses such an apparatus.

[0005] The apparatus of this patent has a support surface for supporting the rider's two feet, and a gliding surface provided to glide. The two surfaces are affixed one to the other so as to be opposite one to the other, and so as to provide a spacing between a connecting surface of the support surface and a connecting surface of the gliding surface. The surfaces substantially have the same length, and the support surface is wider than the

gliding surface. This apparatus allows for travel on different types of ground along a continuous course or along a course interrupted with turns.

[0006] In the case of hard ground, for example, constituted of ice or packed snow, the apparatus remains on the surface. A user can use any steering style. However, it appears that snow would tend to accumulate between the surfaces, particularly during turns.

[0007] In the case of soft or powdery ground, for example, composed of powdery or soft snow, the apparatus sinks, sometimes until contact of the support surface with the ground, other times until complete immersion. Regardless of the sinking depth, snow would still accumulate between the surfaces to form a wedge filling the volume between the surfaces. The wedge itself rubs against the snow during the steering of the apparatus, slowing it down. Therefore, the wedge weighs down the apparatus. As a result, the steering of the apparatus is more difficult since it requires more effort.

SUMMARY OF THE INVENTION

[0008] One of the objects of the invention is to make it easier to steer of a gliding apparatus, particularly on soft or powdery ground.

[0009] To this end, the invention proposes a gliding apparatus having a support surface provided to support a user's feet, and a gliding surface provided to glide, the two surfaces being opposite one to the other so as to provide a spacing therebetween, the surfaces substantially having the same length, the support surface being wider than the gliding surface.

[0010] A closed volume is demarcated between the support and gliding surfaces of the apparatus according to the invention. For instance, a first shovel of the support surface and a first shovel of the gliding surface meet, a second shovel of the support surface and a second shovel of the gliding surface meet, a first lateral side edge connects a first edge of the gliding surface to a connecting surface of the support surface, and a second lateral side edge connects a second edge of the gliding surface to the connecting surface of the support surface. The junctions of the surface end zones and the side edges close the volume between the surfaces. Consequently, snow or other material cannot accumulate therein. No wedge is formed between the surfaces.

[0011] As a result, no additional friction is induced by the nature of the ground covered, and no additional weight is added to the apparatus during steering. An advantage that follows is an easier steering, particularly on a soft or powdery ground.

BRIEF DESCRIPTION OF DRAWINGS

[0012] Other characteristics and advantages of the invention will be better understood from the following description, with reference to the attached drawings showing, according to non-limiting examples, how the invention can be embodied, and in which:

FIG. 1 is a top perspective view of a gliding apparatus according to a first example of embodiment of the invention;

FIG. 2 is a bottom perspective view of the apparatus of FIG. 1;

FIG. 3 is a side view of the apparatus of FIG. 1;

FIG. 4 is a cross-section along the line IV-IV of FIG. 3;

FIG. 5 is a cross-section along the line V-V of FIG. 3;

FIG. 6 is a cross-section similar to FIG. 4, according to a second embodiment of the invention;

FIG. 7 is a cross-section similar to FIG. 4, according to a third embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0013] The first embodiment of the invention is described hereinafter with reference to FIGS. 1-5.

[0014] As known and as seen in FIG. 1, a gliding apparatus 1 has a support surface 2 provided to support the user's two feet, and a gliding surface 3 provided to glide. The two surfaces 2, 3 are opposite one to the other so as to provide a spacing therebetween.

[0015] The apparatus 1 extends longitudinally from a first 4 to a second 5 limit, each of the limits 4, 5 can be considered as the front or as the rear. The apparatus 1 extends transversely from a first 6 to a second 7 side; each of the sides 6, 7 can be considered as the right side or as the left side.

[0016] The perimeter of the support surface 2 has a first end 10, a first lateral edge 11, a second end 12, and a second lateral edge 13. A top 14 of the support surface is provided to receive the user's feet.

[0017] According to the embodiment, a support cover 15 is preferably affixed to the top 14 of the support surface. In particular, the support cover 15 allows a good adherence of the feet or boots to the top 14, facilitating the steering of the apparatus. The support cover 15 can be constituted of one or several layers of flexible material(s) having a relatively high coefficient of friction. For instance, a layer of flexible plastic foam, made of polyurethane, ethylene vinyl acetate, or any similar material, for example, can be used. The support cover 15 is affixed to the top 14 in any suitable manner, such as by an adhesive, stapling, stitching, rivets, screws, or the like.

[0018] The support cover 15 can substantially cover the entirety of the top 14, although it could only cover a portion.

[0019] Although shown in the form of a unitary element, the support cover 15 can have several portions that are juxtaposed or non-juxtaposed.

[0020] Furthermore, the support surface 2 has, from the first 10 to the second 12 end, a first shovel 20, a first receiving portion 21, a central portion 22, a second receiving portion 23, and a second shovel 24. It is to be understood that each shovel 20, 24 is a raised end portion of the support surface 2. Each of the shovels 20, 24 is shown in the form of a curved portion, whose center(s) of curvature is on the side of the top 14. Each of the shovels could nonetheless have a different structure, such as that of a raised straight portion, or of a raised curved portion, but whose center(s) of curvature would be on the side opposite to the top 14.

[0021] It is also to be understood that each receiving portion 21, 23 is a preferred portion for receiving the user's feet during a steering in which the gliding apparatus 1 remains in contact with the snow, or other gliding surface, over its entire length. The feet, however, can be positioned anywhere on the support surface 2.

[0022] The support surface 2 is preferably made of plastic, such as polyoxymethylene, polyethylene, acetyl-butadiene-styrene, polyurethane, or the like, although other materials could be used. For instance, it can be provided to use wood, in the form of wood core plywood, or the like. It could also be provided to stack a reinforcement of composite material, a foam and/or wood core, and another reinforcement of composite material. The reinforcements can be covered with layers for protecting against external impacts and abrasions, such as a layer of plastic.

[0023] As seen better in FIG. 2, the gliding surface 3 has a perimeter that has a first end 25, a first lateral edge 26, a second end 27, and a second lateral edge 28.

[0024] A bottom 35 of the gliding surface 3 is provided to glide upon a support; the latter can be ice, snow, grass, a synthetic material, or the like.

[0025] The gliding surface 3 has, from the first 25 to the second 27 end, a first shovel 36, a central portion 37, and a second shovel 38. Here again, each shovel 36, 38 must be understood as being a raised end portion of the gliding surface 3. Each of the shovels 36, 38 is shown in the form of a raised portion whose center(s) of curvature is located on the side opposite the bottom 35. This form is not limiting.

[0026] The gliding surface 3 is preferably constituted of a plate made of plastic. For instance, polyoxymethylene, polyethylene, acetyl-butadiene-styrene, polyurethane, or the like, could be used.

[0027] The gliding surface 3, however, could be constituted by a ski. For instance, it would be formed of a vertical stacking that, bottom up, can be composed of a gliding layer, a lower reinforcement, a core, an upper reinforcement, and possibly a protective layer. This stacking essentially includes composite materials, and possibly wood. The edges 26, 28 and/or the ends 25, 27 of the gliding surface 3 can have running edges.

[0028] Other materials can be used to make the gliding surface 3.

[0029] The support 2 and gliding 3 surfaces substantially have the same length. Each surface 2, 3 can be slightly shorter, the same length, or longer than the other. The support surface 2 is wider than the gliding surface 3. The lateral edges 11, 13 of the support surface 2 overhang with respect to the gliding surface 3. Thus, the forces exerted by the user's feet on the top 14, in the area of the lateral edges 11, 13, are transmitted to the gliding surface 3 while being amplified. A resulting advantage is a decrease in fatigue when steering the apparatus 1. Due to the overhang, the user can, with his/her

feet, exert a torque for tilting the apparatus, allowing for an edge setting by sinking one of the lateral edges 26, 28 in the snow.

[0030] According to the invention, and as seen better in FIG. 3, the first shovel 20 of the support surface 2 and the first shovel 36 of the gliding surface 3 meet. Similarly, the second shovel 24 of the support surface 2 and the second shovel 38 of the gliding surface 3 meet. Toward each of the first 4 and second 5 limits of the gliding apparatus 1, the first 20, 36 and second 24, 38 shovels are respectively tangent one to the other and coupled one to the other. The first 20, 36 and second 24, 38 shovels are respectively superimposed one on the other to form a single end portion. Each portion has an aspect similar to that of the shovels. In particular, each portion has a curvature whose center(s) is located on the side of the top 14 of the support surface 2. This structure imparts to the apparatus 1 a good aptitude for clearing a path through the snow.

[0031] As seen in FIG. 4, a first lateral side edge 39 connects the first lateral edge 26 of the gliding surface 3 to a connecting surface 40 of the support surface 2. Similarly, a second lateral side edge 41 connects the second lateral edge 28 of the gliding surface 3 to the connecting surface 40. The top 14 and the connecting surface 40 demarcate the thickness of the support surface 2. In the traverse direction, the first 39 and second 41 side edges close the space between the support 2 and gliding 3 surfaces.

[0032] Consequently, a closed volume 42 is demarcated between the support 2 and gliding 3 surfaces. The closure of the volume 42 prevents the accumulation of foreign matter, such as snow, between the surfaces 2, 3. That is why the apparatus 1 is not weighed down during the steering. In addition, the side edges 39, 41 respectively have an even surface 43, 44 for contact with the snow. This promotes the gliding of the side edges 39, 41 and, consequently, of the apparatus 1 over the snow.

[0033] According to the first embodiment, the support surface 2 has a central longitudinal opening 50 that is closed by a cover 51. This allows manufacturing the gliding apparatus 1 in two main portions.

[0034] The first portion has the support surface 2, except for the cover 51, the lateral side edges 39, 41, the gliding surface 3 and, although not necessarily, ribs 52, 53, 54 originating from the gliding surface and projecting toward the central opening 50. An example of distribution of the ribs is seen in FIG. 5. The first portion is preferably a unitary element obtained, for example, by plastic injection. Any other manufacturing method could be used, such as the assembly of various elements of the first portion by any appropriate means.

[0035] As for the second portion, it is constituted by the cover 51. The latter can be made of plastic, for example.

[0036] In order to form the gliding apparatus 1, it suffices to close the opening 50 of the support surface 2 with the cover 51. The closure can be permanent. It can be obtained by any appropriate means, such as gluing, welding, or the like.

[0037] The closure could be temporary, in which case the cover 51 could be screwed, ratcheted, or affixed by any appropriate means for this purpose. The closed volume 42 is thus demarcated by the cover 51 on the side of the support surface 2. This volume can remain hollow or be filled with a plastic foam or any equivalent material. The type of filling contributes to dampening the vibrations. In addition to its main function mentioned previously, the support cover 15 hides the peripheral limit 55 of the opening 50 and of the cover 51.

[0038] In a complementary manner and as seen in FIGS. 2 and 4, guiding grooves are provided. These grooves are provided on the side of the bottom 35 of the gliding surface

3. They are oriented along the length of in the apparatus 1, and they improve the stability of the apparatus in steering, particularly when the apparatus 1 glides flat on the snow.

[0039] According to the embodiment, there are three grooves, namely a first lateral groove 56, a central groove 57, and a second lateral groove 58. For each of the lateral grooves 56, 58, a section with ridges was provided, in order to promote the steering stability on a flat surface. For the central ridge, a rounded concave section was provided, which can be useful during certain acrobatic maneuvers. As a matter of fact, the user can take support with the bottom 35 on a relief that is itself rounded, such as that of a railing.

[0040] A different number of grooves could be provided, as well as various forms for their sections.

[0041] Preferably, the grooves extend both along the central portion 37 and partially at least along the shovels 36, 38. This makes them efficient on all types of snow.

[0042] Other embodiments of the invention are presented hereinafter with reference to FIGS. 6 and 7.

[0043] For reasons of convenience, only the differences with respect to the first embodiment are described in detail.

[0044] The second embodiment is presented with reference to FIG. 6, which relates to a gliding apparatus 70 that has a support surface 71 and a gliding surface 72. The surfaces 71, 72 are connected one to the other by a first lateral side edge 73, a second lateral side edge 74, and ribs 75, 76, 77 originating from the gliding surface 72. Here again, the apparatus 70 has two main portions. However, these portions are different

from the ones according to the first embodiment. The first portion has the gliding surface 72, the lateral side edges 73, 74, and the ribs 75, 76, 77. The second portion is formed by the support surface 71. Each of the portions is preferably a unitary element. The portions are assembled by any means in order to form the gliding apparatus 70.

[0045] The third embodiment is shown with reference to FIG. 7, which relates to a gliding apparatus 90 that has a support surface 91 and a gliding surface 92. Here again, the apparatus 90 has two main portions, yet these portions differ from the ones according to the preceding embodiments of the invention. The first portion is the gliding surface 92, the second is the support surface 91. The portions are affixed one to the other by an intermediary layer 93 that extends between the surfaces 91, 92 opposite to the gliding surface 92. The intermediary layer can be made of any natural or synthetic material, such as cork, wood, plastic foam, or the like. The affixing of the intermediary layer to the surfaces occurs by any appropriate means.

[0046] The invention can be made from all of the materials used according to all of the techniques known to one skilled in the art.

[0047] Preferably, the apparatus is substantially longitudinally symmetrical, i.e., with respect to a central transverse axis. It is also preferred to be substantially transversely symmetrical, with respect to a central longitudinal axis. Thus, each limit 4, 5 of the apparatus can be the front or the rear.

[0048] The length of the apparatus 1, 70, 90 is preferably between 60 and 100 centimeters, its width between 15 and 30 centimeters, and its central height between 3 and 10 centimeters

[0049] The invention is not limited to the particular details of the embodiments described hereinabove, and it includes all technical equivalents that come within the scope of the following claims.

[0050] Specifically, it is possible to provide other structures for the constitutive portions of the apparatus.